**Question 2 Total = 10 marks**

Allocate marks as follows:

- *A research hypothesis for the study, e.g.*
 - *People who learn a list of terms organised according to meaning will recall a significantly greater number of the terms than will people learning a list not organised semantically.*
2 marks Students formulate a hypothesis that identifies the IV, DV and population
 - 1 mark Hypothesis omits one of above features
- *Independent variable (IV):*
 - *semantic versus random organisation*
1 mark Students make the above point
- *Dependent variable (DV):*
 - *the average number of words recalled by participants*
1 mark Students make the above point
- *Evaluation of the study design and a discussion of any methodological shortcomings*
 - *Study used independent groups design. This was suitable, because each participant was allocated to one condition only avoiding order effects. However, participants were not randomly allocated to groups; nor were they matched, resulting in groups with different ranges of individual differences.*
3 marks Students make any three of the above points
 - *Renee conducted the study and scored participants' responses herself, possibly introducing experimenter effects*
2 marks Students make any two of the above points
 - *The sample does not adequately represent the population (people in general) since participants were all adolescents*
1 mark Students make any one of the above points
- *A statement regarding the significance/non-significance of the results;*
 - *$p \leq 0.05$, therefore the probability that the difference between means was due to chance is less than 0.05 and therefore the hypothesis is supported*
1 mark Students make the above point
- *A discussion of ethical issues raised by the study:*
 - *Study did not satisfy ethical requirements with regard to informed consent. Since participants were under-age, written permission was required from their parents/guardians*
 - *Participants were not debriefed*
1 mark Students make any one of the above points
- *Conclusions about the study:*
 - *Even though the hypothesis is supported, the shortcomings of the study design make it difficult to conclude that semantic organisation facilitates recall of learned information*
1 mark Students make the above point (or similar)

END OF SUGGESTED SOLUTIONS

PSYCHOLOGY

Unit 3

Trial Examination

SOLUTIONS BOOK

Use this page as an overlay for marking the multiple choice answer sheets. Simply photocopy the page onto an overhead projector sheet. The correct answers are open boxes below. Students should have shaded their answers. Therefore, any open box with shading inside it is correct and scores 1 mark.

	ONE ANSWER PER LINE		ONE ANSWER PER LINE		ONE ANSWER PER LINE
1	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	16	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	31	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
2	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	17	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	32	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
3	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	18	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	33	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
4	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	19	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	34	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
5	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	20	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	35	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
6	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	21	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	36	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
7	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	22	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	37	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
8	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	23	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	38	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
9	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	24	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	39	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
10	<input checked="" type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	25	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>	40	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
11	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	26	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	41	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
12	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	27	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	42	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
13	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	28	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	43	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
14	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	29	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>	44	<input type="checkbox"/> <input checked="" type="checkbox"/> <input type="checkbox"/>
15	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	30	<input checked="" type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>	45	<input checked="" type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>

SECTION C – Extended response question

Question 1 Total = 10 marks

Allocate marks as follows:

- A statement agreeing with the contention in the introduction, supported by research and/or anecdotal evidence, for example
 - case of Peter Tripp’s experiences of going without sleep for over 200 hours
 - animal experiments showing that sleep deprivation causes death
 - effects of sleep deprivation on driving
 - studies showing that sleep deprivation causes deterioration on cognitive tasks2 marks Students agree with contention and give appropriate supporting evidence
1 mark Students agree with contention but do not give appropriate supporting evidence

- An outline of two theories of sleep, including a discussion of supporting empirical evidence and a statement of the theory’s limitations; for example:

The restorative theory of sleep:

Brief summary (2 marks)

- Waking time activities cause wear-and-tear and/or depletion of resources and energy.
- The purpose of sleep is to allow the body time out for repair/recovery/replenishment, of these depletions

Evidence in support of theory (1 mark)

- Growth hormones secreted at a higher rate during sleep
- Sleep is a period during which most physiological activity is reduced; muscles are relaxed
- People tend to sleep longer after strenuous activity and when ill
- REM sleep shown to have an important role in learning and memory
- People deprived of REM sleep experience REM rebound

Limitations (1 mark)

- It is not yet known what is ‘restored’ or repaired during sleep

- 4 marks Students state key assumptions of theory, provide appropriate supporting evidence and describe theory’s limitations
3 marks Students make three of the above points
2 marks Students make two of the above points
1 mark Students make one of the above points

The survival theory of sleep

Brief summary (2 marks)

- Sleep evolved to enhance survival by protecting the animal during the time when it is most dangerous for it to be active
- While asleep, the animal conserves energy, is less likely to attract predators

Supporting evidence (1 mark)

- Predators tend to sleep longer than prey animals; large prey animals (horses, buffalo, deer, etc) tend to sleep less and remain vigilant; small prey animals tend to sleep for more extended periods

Limitations (1 mark)

- Sleep involves loss of awareness, muscle relaxation, lower sensory sensitivity, etc. All these changes make the animal potentially more vulnerable

- 4 marks Students state key assumptions of theory, provide appropriate supporting evidence and describe theory’s limitations
3 marks Students make three of the above points
2 marks Students make two of the above points
1 mark Students make one of the above points

Question 11

- a.

Answer

According to the semantic network theory

 - *Information in LTM is organised semantically (according to meaning) into overlapping networks (grids) of concepts (nodes) that are interconnected by meaningful links*
 - *Activation of a particular node produces activation of adjacent nodes*
 - *Information is stored in a hierarchical manner*

2 marks

Students make two of the above points

1 mark

Students make one of the above points

b.

Answer

- *Research shows that people find it easier to memorise and retrieve information organised according to meaning*

1 mark

Students make the above point
- Question 12
- a.

Answer

- *To alleviate any discomfort and distress (thus returning participants to original state)*
 - *To remove any misconceptions caused by experimental design*
 - *To gain possibly valuable insight into participants experience of the study*

2 marks

Students make any two of the above points

1 mark

Students make any one of the above points

b.

Answer

- *The purpose of the study*
 - *A general statement of the results*

1 mark

Students make one of the above points

SECTION A – Multiple-choice questions

1	A	16	D	31	B
2	B	17	D	32	B
3	D	18	D	33	A
4	A	19	C	34	D
5	A	20	A	35	B
6	C	21	B	36	B
7	C	22	A	37	C
8	C	23	B	38	A
9	A	24	C	39	D
10	D	25	A	40	C
11	C	26	B	41	A
12	D	27	D	42	B
13	B	28	C	43	B
14	D	29	C	44	A
15	B	30	D	45	C

SECTION B – Short answer questions

Question 1

Answer

- *The mind and the body are different and separate. The ‘mind’ is a non-physical entity (like a ‘soul’) while the body is made of matter and therefore material.*
 - *However, the mind and body are interconnected and they interact to produce conscious experience.*

2 marks

Students make both of the above points

1 mark

Students make one of the above points

Question 2

Answer

- *Distortions of perception and cognition: for example the client may be able to imagine being in a threatening situation but perceive it as safe.*
 - *Changes in emotional awareness: for example, a client may be able to recall a painful memory without experiencing the distress associated with it.*
 - *Changes in self-control: for example, the client would be very open to suggestions made by Ali.*
 - *Distortion to experience of time: for example, the client may feel that time passes quicker, or more slowly, while hypnotised.*

2 marks

Students make any two of the above points

1 mark

Students make any one of the above points

Question 3

a.

Answer

- *parietal lobe*
 - *sense of touch*

2 marks

Students make both of the above points

1 mark

Students make one of the above points

b.

Answer

- *reticular activating system - selective attention and wakefulness*
 - *thalamus - directing attention and switching sensory input on and off*

2 marks

Students make both of the above points

1 mark

Students make one of the above points

Question 4

- a. Answer
- In both, there is relatively direct stimulation of specific brain areas. It is assumed that any observed change of behaviour and function that follows is the result of this stimulation. Therefore, this method allows for the determination of cause – effect relationship between a structure and its function
- 1 mark Students make the above point
- b. Answer
- DBS involves using electrodes (or chemicals or direct pressure) to stimulate regions of an exposed brain; in TMS the brain is not exposed and no surgery is needed.
 - DBS is invasive (requires brain to be exposed) and is therefore performed in individuals who are undergoing surgery; TMS is not invasive and is performed on intact brains.
 - The brains of individuals receiving ESB may not be typical, making generalisations problematic. This is not an issue with TMS.
- 2 marks Students provide a valid distinction between the two methods
- 1 mark Students discuss one method only

Question 5

- Answer
- Individuals with this syndrome fail to notice anything on one side of body, usually the left.
 - The side that is subject to neglect is opposite to the side of brain where damage has occurred, e.g. damage to right side results in neglect of the left side of the body.
- 2 marks Students make both of the above points
- 1 mark Students make one of the above points

Question 6

- Answer
- Memory formation involves
- an increase in the amount of neurotransmitters produced and released by neurons
 - increase in the number of dendritic spines between interconnected neurons
 - formation of new synapses between interconnected neurons
- 2 marks Students make any two of the above points
- 1 mark Students make any one of the above points

Question 7

- a. Answer
- Group I: ‘On this list of 50 words, circle all the ones you had previously learned’.
 - Group II: ‘On a blank piece of paper, write down all the words you had previously learned’.
- 2 marks Students make both of the above points
- 1 mark Students make one of the above points
- b. Answer
- Group II. In general, people can recognise more than they can recall because, unlike recall, the method of recognition provides cues that can be used to retrieve information from LTM.
- 1 mark Students make the above point
- c. Answer
- Measure how long (on average) it takes the students to fully learn the list the first time they see it. Then, after a period of time, measure how long it takes them to re-learn the list.
 - Use this formula to calculate a savings score:
- $$\frac{\text{Time taken to learn list 1}^{\text{st}} \text{ time} - \text{time taken to re-learn list}}{\text{Time taken to learn list 1}^{\text{st}} \text{ time}} \times \frac{100}{1}$$
- 2 marks Students make both of the above points
- 1 mark Students make one of the above points

Question 8

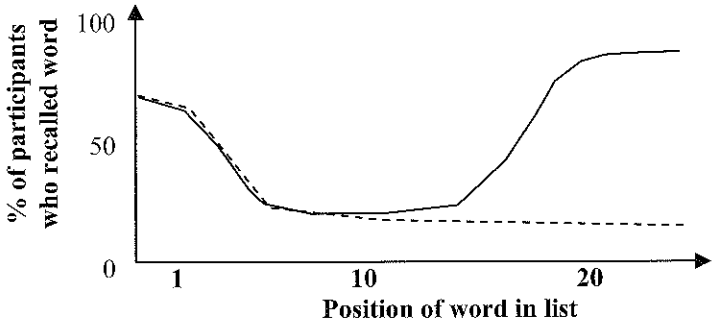
- a. Answer
- Chunking
- 1 mark Students make the above point
- b. Answer
- STM has a limited capacity of 7 ± 2 items. Chunking combines several elements into a single ‘chunk’ that takes up just one ‘space’ in STM, thus increases the amount of information that can be held in short-term memory
- 1 mark Students make the above point

Question 9

- a. Answer
- According to the decay theory of forgetting, the storage of new information involves the formation in the brain of a physical or chemical ‘trace’.
 - Unless regularly refreshed, this trace fades or breaks down over time, resulting in the loss of the information, i.e. forgetting
- 2 marks Students make both of the above points
- 1 mark Students make one of the above points
- b. Answer
- People manage to retrieve from LTM material (e.g. childhood experiences) they have not thought about for long periods of time. This indicates that retrieval failure is due to factors other than ‘decay’.
- 1 mark Students make the above point

Question 10

- a. Answer
- Serial position effect
- 1 mark Students make the above point
- b. Answer
- Words at the end of the list are still in STM; those at the start have been rehearsed and have entered LTM
 - The words in the middle of the list are no longer in STM but have not been sufficiently rehearsed to enter LTM. Their recall is therefore poorer than recall of the other words.
- 2 marks Students make both of the above points
- 1 mark Students make one of the above points
- c. Answer
- Students draw a line similar to the dotted one on the axes below.



1 mark Students draw appropriate line